

Notice of Allowability

Application No.

10/766,022

Examiner

Jesse Diller

Applicant(s)

NAKATANI ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the afterfinal amendment dated 04/03/07.
2. ☒ The allowed claim(s) is/are 2-5, 7-10 and 12-15 (renumbered 1-12 for issue).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying Indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Carl Brundidge, Reg. 29,621, on April 12, 2007.

The Claims have been amended as follows:

12. (Currently Amended) ~~The network system of claim 11~~ A network system comprising:

a first storage system; and

a second storage system,

wherein each of said first and second storage systems comprises:

a disk;

a disk-control unit to control writing and reading of data to and from said

disk;

a disk cache for transmitting and receiving data to and from said disk;

a file server including a CPU, a main memory to store programs and data

for said CPU, and a network interface to be coupled to clients through a network;

and

interfaces for sending and receiving data to and from disks of other storage systems through a communication link;

wherein each main memory of the first and second storage systems includes a file system-processing unit managing storage areas of a disk so that files are correlated with locations on the disk and a file-system cache to be used by said file system-processing unit;

wherein the disk-control unit of said first storage system receives contents of a file updated in the second storage system and a history of file-management information from the second storage system through said communication link, without using the file server of said second storage system that is connected to the disk of said second storage system, and stores the contents of a file and the history of file-management information on the disk cache of said first storage system;

wherein the file system-processing unit of said first storage system monitors the history of the file-management information on the disk cache of the first storage system and updates the file-management information in the file-system cache of said first storage system in accordance with the update of the file in said second storage system if a change in the history of the file-management information on the disk cache of the first storage system has occurred; and

wherein, when said first storage system receives a read request from a client, said first storage system refers to the file-management information

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updated in said file-system cache, reads, from the disk, the contents of the update file received from said second storage system, and transfers the contents to said client[.].

wherein the file system-processing unit of said first storage system comprises:

a metadata-update monitor monitoring the update of metadata, including data for file management, by referring to a journal log, including a history of said management information; and

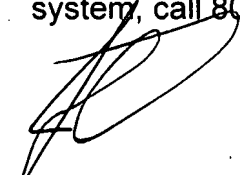
a metadata-updating unit updating the metadata in said file-system cache when said metadata-update monitor detects the update of the file.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jesse Diller whose telephone number is (571) 272-4173. The examiner can normally be reached on 9:30AM-6:00PM.

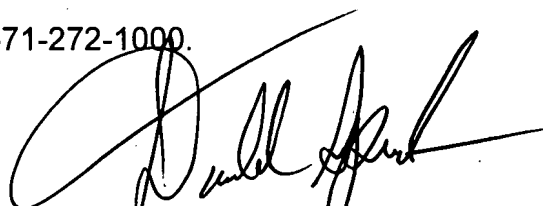
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



JD



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SUPERVISORY PATENT EXAMINER